

REMARKS

I. The rejection under 35 U.S.C. § 103(a) should be withdrawn.

The Examiner rejected claims 1 and 5-11 as assertedly being unpatentable over Murad (U.S. Patent No. 6,800,292) in view of Norton (U.S. Patent No. 5,976,556). Applicant requests reconsideration of the rejection in view of the following remarks.

Independent claim 1 recites an external preparation (i.e., composition) comprising glycolic acid and polyethylene glycol (PEG), wherein the PEG has a polymerization degree of 2,000 to 50,000. Independent claim 6 recites an external preparation (i.e., composition) comprising glycolic acid and polyvinyl alcohol.

Murad simply does not disclose or suggest the preparations (i.e., compositions) recited in the claims as asserted by the Examiner. Murad discloses that its composition(s) comprise(s) at least one fruit extract¹ and a moisturizing agent. With respect to claim 1, Murad fails to disclose or suggest a composition comprising glycolic acid and polyethylene glycol (PEG), wherein the PEG has a polymerization degree of 2,000 to 50,000. Murad generically discloses that its compositions may contain PEG and specifically discloses PEG-100, which is clearly outside of the range recited in claim 1 (i.e., PEG-2,000 - PEG-50,000). Norton fails to remedy the deficiencies of Murad and generically discloses that its compositions may comprise ethylene glycol and specifically discloses PEG-40 and PEG-75. Norton is silent with respect to a composition comprising PEG with a polymerization degree of 2,000 to 50,000 and therefore cannot make up for the deficiencies of Murad.

The Examiner asserts that "a polymerization degree of from 2,000 to 50,000 is obvious of any polyethylene glycol in the preparation." However, the Examiner has not pointed to how the PEG recited in the claims is obvious in view of the cited art (which disclose PEG-40, PEG-75 and PEG-100). According to M.P.E.P. § 2141,

[w]hen making an obviousness rejection, Office personnel must therefore ensure that the written record includes findings of fact concerning the state of the art and the teachings of the references applied. In certain circumstances, it may also be important to include explicit findings as to how a person of ordinary skill would have understood prior art teachings, or what a person of ordinary skill would have known or could have done. Factual findings made by Office personnel are the necessary underpinnings to establish obviousness.

¹ The claims of the present invention do not require a fruit extract.

One of skill in the art would not have been motivated upon review of Murad and Norton to discard the PEG disclosed therein for the PEG recited in independent claim 1. First, PEG-40, PEG-75 and PEG-100 have degrees of polymerization of 40, 75 and 100, respectively, which is much lower than the range provided in claim 1. Second, it is known in the art that PEGs with varying degrees of polymerization have different functions. For example, PEG having a degree of polymerization below 100 functions as a humectant and/or a solvent while a PEG having a degree of polymerization 2,000 or greater functions as an emulsion stabilizer and/or a viscosity increasing agent. See, ICID and Handbook, 11th Edition (2006), pages 1549-1635 set forth in Appendix A. Finally, it is also known in the art that PEGs with varying degrees of polymerization are provided in different forms. For example, PEG having a degree of polymerization less than 420 is provided as a liquid, while PEG having a degree of polymerization greater than 570 is provided in a solid form. See, Aldrich Handbook of Fine Chemicals (2007-2008), page 2023 set forth in Appendix B. The Examiner has neither pointed to a specific teaching in the cited art nor provided findings of fact concerning the state of the art that would motivate one of skill in the art to replace a PEG provided in a liquid form for use as a humectant and/or solvent, such as the PEG-40, -75 or -100 disclosed in Norton or Murad, for a PEG provided in a solid form for use as an emulsion stabilizer and/or viscosity increasing agent, such as the PEG-2000 or greater disclosed in the present application.

The Examiner also failed to identify why one of skill in the art would be motivated to replace the PEG-100 of Murad or the PEG-40 or PEG-75 of Norton for the PEG recited in claim 1. In fact, attached as Appendix C is further experimental data indicating that a composition comprising a PEG having a degree of polymerization outside the range recited in claim 1 is inferior to the external preparation recited in claim 1. The results indicated that three different compositions comprising varying degrees of polymerization of PEG within the range recited in claim 1 (i.e., PEG-2000, PEG-7000 and PEG-45000) were more effective than a composition comprising PEG comprising a degree of polymerization well below the range recited in claim 1 (i.e., PEG-400).

Turning now to the rejection of independent claim 6, Applicant disagrees with the Examiner's conclusion that the combined teachings of the cited art render this claim and those claims dependent thereon obvious. The Examiner has not pointed to a teaching in Murad or Norton that discloses or suggests a specific composition comprising glycolic acid

and polyvinyl alcohol. For example, Murad discloses that its composition comprises at least one fruit extract and a mono- or poly-hydroxy acid. Murad discloses that its composition comprises a mono- or poly-hydroxy acid selected from at least eighty (80) acids mono- or poly-hydroxy acids (col. 9, line 36 through col. 10, line 11) and a pharmaceutically acceptable carrier², but does not specifically disclose a composition that comprises glycolic acid and polyvinyl alcohol.

Norton discloses that its composition comprises an acid protease³ and an acidic buffer. Norton discloses that the acidic buffer includes one of at least twelve (12) acids (col. 10, lines 41-44) and one of at least nine (9) pharmaceutically acceptable carriers (col. 10, lines 63-65), but does not specifically disclose a composition that specifically comprises glycolic acid and polyvinyl alcohol. Accordingly, the combined teachings of Murad and Norton fail to teach or suggest the external preparation recited in claim 1.

In view of the foregoing, Applicant respectfully submits that the cited art fails to disclose or suggest the specific preparations recited in the claims. Accordingly, there is no *prima facie* case of obviousness and the rejection of claims 1 and 5-11 under 35 U.S.C. § 103(a) should be withdrawn.

II. Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: March 28, 2008

Respectfully submitted,

Electronic signature: /Jeanne M. Brashear/56,301
Jeanne M. Brashear
Registration No.: 56,301
MARSHALL, GERSTEIN & BORUN LLP
233 S. Wacker Drive, Suite 6300
Chicago, Illinois 60606-6357
Agent for Applicant

² Polyvinyl alcohol is listed as one of the more than seventy (70) pharmaceutically-acceptable carriers disclosed in Murad (col. 8, lines 40-66)

³ The claims of the present invention do not require an acid protease.

APPENDIX A

International Cosmetic Ingredient Dictionary and Handbook

**Eleventh Edition
2006**

Volume 2

INCI Name Monographs I-S

International Cosmetic Ingredient Dictionary and Handbook

**Eleventh Edition
2006**

Editors

Tara E. Gottschalck
G. N. McEwen, Jr., Ph.D., J.D.

Volume 2

Published by

The Cosmetic, Toiletry, and Fragrance Association
1101 17th Street, NW, Suite 300
Washington, D.C. 20036-4702



No portion of the *International Cosmetic Ingredient Dictionary and Handbook* may be reproduced in whole or in part in any form or by any electronic or mechanical means, including information storage and retrieval systems, without prior written permission from The Cosmetic, Toiletry, and Fragrance Association, Inc., 1101 17th Street, N.W., Suite 300, Washington, DC 20036-4702.

The *International Cosmetic Ingredient Dictionary and Handbook* contains information about ingredient labeling requirements in the United States, the European Union, and other countries. This information is based on publicly available information. While every effort was made to ensure its accuracy and timeliness, compliance with the laws and regulations of the United States, the European Union, or other countries is solely the responsibility of the user of the *Dictionary and Handbook*. CTFA cannot be held responsible for any specific or general use of the information in the *Dictionary and Handbook* and disclaims any liability arising from reliance thereon.

The INCI Names presented in the *International Cosmetic Ingredient Dictionary and Handbook* are the result of substantial efforts by CTFA Staff and a committee of experts from the industry and government. INCI Names are developed and assigned on the basis of rules developed by CTFA. The material as presented in this format is unique and found nowhere else. The compilation and arrangement of the information for convenient reference represents an extensive amount of staff resources, judgment, effort, and time, and contributes to the originality of the text. The *International Cosmetic Ingredient Dictionary and Handbook* is fully copyrighted and may not be copied by any means without the written permission of CTFA.

Concerning U.S. Patent and Trademark Rights: The inclusion in the *International Cosmetic Ingredient Dictionary and Handbook* of a monograph of any cosmetic ingredient, in respect to which patent or trademark rights may exist, shall not be deemed, and is not intended as, a grant of, or authority to exercise, any right or privilege protected by such patent or trademark. All such rights and privileges are vested in the patent or trademark owner, and no other person may exercise the same without express permission, authority, or license secured from such patent or trademark owner.

Copyright © 1973, 1977, 1982, 1985, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005

The Cosmetic, Toiletry, and Fragrance Association, Inc.
CTFA

All rights reserved.
Library of Congress Catalog Card No. 2005921860
ISBN 1-882621-36-0 (4-volume set)
PRINTED IN THE UNITED STATES OF AMERICA

Contents

Volume 1 of 4

Foreword	v
Preface	vii
Acknowledgments	xi

Introduction

A. Regulatory and Ingredient Use Information	xiii
B. Specific Disclaimers	xfx
C. Labeling Reminders	xx
D. INCI Name Assignment Procedures	xxi
E. Ingredient Sources	xxi
F. Nomenclature Conventions	xxii
G. Abbreviations	xxd
H. Information Sources	xxdii
I. INCI Name Changes and Deletions	xxcvii

Section I Monographs (A through I)	1
--	---

Macrogol 1000 (NOF)
 Pluracol E 1000 (BASF)
 Polyglykol 1000 (Clariant)
 Polyglykol 1000 (Clariant GmbH, Personal Care)
 Renex PEG 1000 (Unilever Americas)
 Sabopag 1000 (Sabo)
 Toho PEG#1000 (Toho)
 Unipeg-1000 X (Universal Preserv-A-Chem)
 Uptwax 1000 (Universal Preserv-A-Chem)

Trade Name Mixtures:
 Silwax WS (Siltech LLC)
 Sunceps 664 (Particle Sciences)
 Sunceps 903 (Particle Sciences)

PEG-32

CTFA Monograph ID: 1955

CAS No.: 25322-68-3 (Generic)

JPN Translation:
P E G - 3 2CN Translation:
聚乙二醇-32

Definition: PEG-32 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 32.

Information Sources: BAN, BP, BPC, 21CFR172.210, 21CFR172.770, 21CFR172.820, 21CFR173.310, 21CFR173.340, 21CFR173.105, 21CFR175.300, 21CFR178.3750, 21CFR178.3910, CIR: [SQ] JACT-12(5)-1993, CFTA S, CZE, FCC, HUN, INN, JAN, JCIC, JCLS, JSQI, MAR, MI-13(7651), NF XVIII, TSCA, USAN, USD

Chemical Classes: Alkoxyfated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent**Ingredient Source:** Synthetic

Reported Product Categories: Bath Oils, Tablets, and Salts; Moisturizing Preparations; Cleansing Products (Cold Creams, Cleansing Lotions, Liquids and Pads); Bath Capsules; Skin Care Preparations, Misc.; Dentifrices (Aerosol, Liquid, Pastes and Powders); Bath Preparations, Misc.; Body and Hand Preparations (Excluding Shaving Preparations); Face and Neck Preparations (Excluding Shaving Preparations); Paste Masks (Mud Packs); Mascara

Technical/Other Names:
 macrogol (INN)
 Polyethylene Glycol 1540
 Polyoxyethylene (32)

Trade Names:

Carbowax PEG 1450 (Dow Chemical)
 Jeechem 1450 NF (Jellco Co. LTD)
 Lipo Polyglykol 1500 (Lipo)
 Lipo Polyglykol 3350 (Lipo)
 Lipoxol 1500 MED (Sasol GmbH - Marl)
 Lumulse PEG 1450 (Lambert)
 Macrogol 1500 (NOF)
 Macrogol 1540 (NOF)
 Pluracore E 1500 (BASF)
 Pluracol E 1450 (BASF)
 Polyglycol E1450 (Dow Chemical)
 Polyglykol 1500 (Clariant)
 Polyglykol 1500 (Clariant GmbH, Personal Care)
 Protachem 1450 NF (Protamoen)
 Renex PEG 1500 (Unilever Americas)
 Sabopag 1500 (Sabo)
 Sympetens-PEG/1500 G (Kolb)
 Toho PEG#1540 (Toho)
 Unipeg-1540 X (Universal Preserv-A-Chem)

Trade Name Mixtures:

Carbowax PEG 540 Blend (Dow Chemical)
 Lanogen 1500 (Clariant)
 Lanogen 1500 (Clariant GmbH, Personal Care)
 Swerlinin-P (Ichimaru Pharos)
 Unipeg-1500 X (Universal Preserv-A-Chem)
 Unlax 1450 (Universal Preserv-A-Chem)

PEG-33

CTFA Monograph ID: 17410

Definition: PEG-33 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 33.

Chemical Classes: Alkoxyfated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent**Ingredient Source:** Synthetic**Technical/Other Names:**

Polyethylene Glycol (33)
 Polyoxyethylene (33)

Trade Name Mixtures:

SilSense Copolyol-1 Silicone (Novon)
 SilSense Copolyol-7 Silicone (Novon)

PEG-40

CTFA Monograph ID: 1956

CAS No.: 25322-68-3 (Generic)

JPN Translation:
P E G - 4 0**CN Translation:**

聚乙二醇-40

Definition: PEG-40 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 40.

Information Sources: BAN, 21CFR172.210, 21CFR172.770, 21CFR172.820, 21CFR173.310, 21CFR173.340, 21CFR173.105, 21CFR175.300, 21CFR178.3910, INN, JAN, JCIC, JCLS, MI-13(7651), NF XVIII, ROM, TSCA, USAN

Chemical Classes: Alkoxyfated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent**Ingredient Source:** Synthetic**Technical/Other Names:**

macrogol (INN)
 Polyethylene Glycol (2000)
 Polyoxyethylene (40)

Trade Names:

Pluracol E 2000 (BASF)
 Polyglykol 2000 (Clariant)
 Polyglykol 2000 (Clariant GmbH, Personal Care)

PEG-45

CTFA Monograph ID: 11904

CAS No.: 25322-68-3 (Generic)

Definition: PEG-45 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 45.

Information Source: INN

Chemical Classes: Alkoxyfated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent**Ingredient Source:** Synthetic**Technical/Other Names:**

macrogol (INN)
 Polyethylene Glycol (45)
 Polyoxyethylene (45)

Trade Name:

Toho PEG#2000 (Toho)

PEG-55

CTFA Monograph ID: 7532

The inclusion of any compound in the Dictionary and Handbook does not indicate that use of that substance as a cosmetic ingredient complies with the laws and regulations governing such use in the United States or any other country.

PEG-55 (Cont.)

CAS No.: 25322-68-3 (Generic)

CN Translation:

聚乙二醇-55

Definition: PEG-55 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 55.

Information Sources: BAN, INN, JAN, NF XVIII, USAN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)

Polyethylene Glycol (55)

Polyoxyethylene (55)

Trade Names:

Jeechem 3350 NF (Jellicoe Co. LTD)

Renex PEG 3350 (Uniqema Americas)

PEG-60

CTFA Monograph ID: 5425

CAS No.: 25322-68-3 (Generic)

JPN Translation:

PEG - 60

CN Translation:

聚乙二醇-60

Definition: PEG-60 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 60.

Information Sources: BAN, INN, JAN, NF 13(7651), NF XVIII, USAN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)

Polyethylene Glycol 3000

Polyoxyethylene (60)

Trade Names:

Polyglycol 3000 (Clariant)

Polyglycol 3000 (Clariant GmbH, Personal Care)

CAS No.: 25322-68-3 (Generic)

JPN Translation:

PEG - 75

Definition: PEG-75 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 75.

Information Sources: BAN, BP, BPC, BRA, 21CFR172.210, 21CFR172.770, 21CFR172.820, 21CFR173.310, 21CFR173.340, 21CFR175.105, 21CFR175.300, 21CFR178.3750, 21CFR178.3910, CIR: [SQ] JACT-12(5)-1993, CFTA S, FCC, HUN, INN, JAN, JCL, JSCI, MAR, MI-13(7651), NF XVII, NFJ, PN, POL, ROM, TSCA, USAN, USD

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent

Ingredient Source: Synthetic

Reported Product Categories: Skin Care Preparations, Misc.; Paste Masks (Mud Packs); Bath Oils, Tablets, and Salts; Cleansing Products (Cold Creams, Cleansing Lotions, Liquids and Pads); Moisturizing Preparations

Technical/Other Names:

macrogol (INN)

Polyethylene Glycol 4000

Polyoxyethylene (75)

Trade Names:

Carbowax PEG 3350 (Dow Chemical)

Lipoxol 3350 MED (Sasol GmbH - Mar)

Lumulse PEG 3350 (Lambert)

Pluracare E 3400 (BASF)

Pluracol E 4000 (BASF)

Polyglycol 3350 (Clariant)

Polyglycol 3350 (Clariant GmbH, Personal Care)

Protachem 75 (Protameen)

Renex PEG 4000 (Uniqema Americas)

Sabcopeg 4000 (Sabco)

Symptens-PEG4000 G (Kolt)

Uphwex 3350 (Universal Preserv-A-Chem)

Trade Name Mixture:

Suncaps C (Particle Sciences)

PEG-80

CTFA Monograph ID: 16469

CAS No.: 25322-68-3 (Generic)

Definition: PEG-80 is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 80.

Information Source: INN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)

Polyethylene Glycol (80)

Polyethylene Glycol 4000

Polyoxyethylene (80)

Trade Name:

Protachem 400 (Protameen)

PEG-90

CTFA Monograph ID: 6966

CAS No.: 25322-68-3

JPN Translation:

PEG - 90

CN Translation:

聚乙二醇-90

Definition: PEG-90 is the polymer of ethylene oxide that conforms to the formula:



where n has an average value of 90.

Information Sources: BAN, INN, JAN, NF XVIII, USAN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Humectant; Solvent

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)

Polyethylene Glycol (90)

Polyoxyethylene (90)

Trade Names:

Lipoxol 4000 MED (Sasol GmbH - Mar)

Macrogol 4000 (NOF)

Pluracare E 4000 (BASF)

Polyglycol E-4000 (Dow Chemical)

Polyglycol 4000 (Clariant)

Polyglycol 4000 (Clariant GmbH, Personal Care)

Toho PEG #4000 (Toho)

Unipleg-4000 X (Universal Preserv-A-Chem)

Trade Name Mixture:

Unipleg-4000 X (Universal Preserv-A-Chem)

PEG-100

CTFA Monograph ID: 4098

CAS No.: 25322-68-3 (Generic)

The inclusion of any compound in the Dictionary and Handbook does not indicate that use of that substance as a cosmetic ingredient complies with the laws and regulations governing such use in the United States or any other country.

PEG-2 Laurate SE (Cont.)

Definition: PEG-2 Laurate SE is a self-emulsifying grade of PEG-2 Laurate (q.v.) that contains some sodium and/or potassium laurate.

Information Sources: CIR: [SQ] IJT-19 (SUPPL. 2)2000, JCLS

Chemical Class: Alkoxylated Carboxylic Acids

Function: Surfactant - Emulsifying Agent

Ingredient Sources: Plant; Synthetic

Technical/Other Names:

Diethylene Glycol Monoaurate Self-Emulsifying
Polyethylene Glycol 100 Monoaurate Self-Emulsifying
Polyoxyethylene (2) Monoaurate Self-Emulsifying

Trade Name:

Lipo DGLS (Lipo)

Trade Name Mixture:

Pegosperse 100 L (Lonza Inc./Lonza Ltd.)

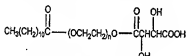
PEG-6 LAURATE/TARTRATE

CTFA Monograph ID: 5910

CN Translation:

PEG-6 月桂酸/酒石酸酯

Definition: PEG-6 Laurate/Tartrate is the mixed ester of PEG-6 and lauric and tartaric acids that conforms generally to the formula:



where n has an average value of 6.

Chemical Class: Alkoxylated Carboxylic Acids

Function: Surfactant - Emulsifying Agent

Ingredient Sources: Plant; Synthetic

Technical/Other Name:

PEG-6 Laurate/Tartrate

Trade Name:

Hydrosphere 312 (Prod'Hyg)

PEG-180/LAURETH-50/TMMG COPOLYMER

CTFA Monograph ID: 12111

Definition: PEG-180/Laureth-50/TMMG Copolymer is a copolymer of PEG-180 (q.v.), a polyethylene glycol ether of lauryl alcohol with an average ethoxylation value of 50, and tetramethoxymethylglycoluril monomers.

Chemical Class: Synthetic Polymers

Function: Viscosity Increasing Agent - Aqueous

Ingredient Sources: Plant; Synthetic

Trade Name:

Pure Tlx 1450 (Sud-Chemie, Performance Additives)

PEG-10/LAURYL DIMETHICONE CROSS-POLYMER

CTFA Monograph ID: 16203

JPN Translation:

(PEG-10 / ラウリルジメチコン) クロスポリマー

Definition: PEG-10/Lauryl Dimethicone Crosspolymer is a copolymer of Lauryl Dimethicone (q.v.) crosslinked with diallyl PEG-10.

Chemical Classes: Siloxanes and Silanes; Synthetic Polymers

Functions: Surfactant - Suspending Agent; Viscosity Increasing Agent - Aqueous

Ingredient Sources: Plant; Synthetic

Trade Name Mixtures:

KSG-34 (Shin-Etsu Chemical Co.)
KSG-340 (Shin-Etsu Chemical Co.)

PEG-15/LAURYL DIMETHICONE CROSS-POLYMER

CTFA Monograph ID: 16204

JPN Translation:

(PEG-15 / ラウリルジメチコン) クロスポリマー

Definition: PEG-15/Lauryl Dimethicone Crosspolymer is a copolymer of Lauryl Dimethicone (q.v.) crosslinked with diallyl PEG-15.

Chemical Classes: Siloxanes and Silanes; Synthetic Polymers

Function: Viscosity Increasing Agent - Aqueous

Ingredient Sources: Plant; Synthetic

Trade Name Mixtures:

KSG-31 (Shin-Etsu Chemical Co.)
KSG-32 (Shin-Etsu Chemical Co.)
KSG-33 (Shin-Etsu Chemical Co.)
KSG-34 (Shin-Etsu Chemical Co.)
KSG-310 (Shin-Etsu Chemical Co.)
KSG-320 (Shin-Etsu Chemical Co.)
KSG-330 (Shin-Etsu Chemical Co.)
KSG-340 (Shin-Etsu Chemical Co.)

PEG-8 LINOLEATE

CTFA Monograph ID: 5452

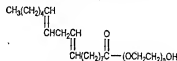
CN Translation:

PEG-8 亚油酸酯

Empirical Formula:

C₃₄H₆₄O₁₀

Definition: PEG-8 Linoleate is the polyethylene glycol ester of linoleic acid that conforms to the formula:



where n has an average value of 8.

Information Source: MI-13(7660)

Chemical Class: Alkoxylated Carboxylic Acids

Function: Surfactant - Emulsifying Agent

Ingredient Sources: Plant; Synthetic

Technical/Other Names:

Polyethylene Glycol 400 Linoleate
Polyoxyethylene (8) Linoleate

Trade Name Mixture:

Elevit S (Faberquímica)

PEG-8 LINOLENATE

CTFA Monograph ID: 5453

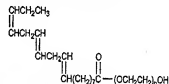
CN Translation:

PEG-8 亚麻酸酯

Empirical Formula:

C₃₄H₆₂O₁₀

Definition: PEG-8 Linolenate is polyethylene glycol ester of linolenic acid that conforms to the formula:



where n has an average value of 8.

Information Source: MI-13(7660)

Chemical Class: Alkoxylated Carboxylic Acids

Function: Surfactant - Emulsifying Agent

Ingredient Sources: Plant; Synthetic

Technical/Other Names:

Polyethylene Glycol 400 Linolenate
Polyoxyethylene (8) Linolenate

Trade Name Mixture:

Elevit S (Faberquímica)

PEG-2M

CTFA Monograph ID: 1961

The inclusion of any compound in the Dictionary and Handbook does not indicate that use of that substance as a cosmetic ingredient complies with the laws and regulations governing such use in the United States or any other country.

PEG-14M

CAS No.: 25322-68-3 (Generic)

JPN Translation:
PEG - 2 MCN Translation:
聚乙二醇-2M

Definition: PEG-2M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 2000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651), NF XVIII, TSCA, USAN

Chemical Classes: Alkoxylated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Reported Product Category: Hair Conditioners

Technical/Other Names:
macrogol (INN)PEG-2000
Polyethylene Glycol (2000)
Polyoxyethylene (2000)Trade Name:
Polyox WSR N-10 (Amerchol)Trade Name Mixture:
Spectravell AQ (Uniqema Europe)

PEG-5M

CTFA Monograph ID: 1962

CAS No.: 25322-68-3 (Generic)

JPN Translation:
PEG - 5 MCN Translation:
聚乙二醇-5M

Definition: PEG-5M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 5000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651), NF XVIII, TSCA, USAN

Chemical Classes: Alkoxylated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Reported Product Categories: Shampoos (Non-coloring); Hair Conditioners

Technical/Other Names:
macrogol (INN)
PEG-5000
Polyethylene Glycol (5000)
Polyoxyethylene (5000)

Trade Names:

Polyox WSR N-80 (Amerchol)
Rita PEO-1 (Rita)

PEG-7M

CTFA Monograph ID: 1963

CAS No.: 25322-68-3 (Generic)

JPN Translation:
PEG - 7 MCN Translation:
聚乙二醇-7M

Definition: PEG-7M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 7000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651), NF XVIII, TSCA, USAN

Chemical Classes: Alkoxylated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Reported Product Category: Shampoos (Non-coloring)

Technical/Other Names:
macrogol (INN)
PEG-7000
Polyethylene Glycol (7000)
Polyoxyethylene (7000)

Trade Name:

Polyox WSR N-750 (Amerchol)

PEG-9M

CTFA Monograph ID: 3708

CAS No.: 25322-68-3 (Generic)

JPN Translation:
PEG - 9 MCN Translation:
聚乙二醇-9M

Definition: PEG-9M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 9000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651), NF XVIII, USAN

Chemical Classes: Alkoxylated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:
macrogol (INN)PEG-9000
Polyethylene Glycol 9000
Polyoxyethylene (9000)

Trade Names:

Alkox E-300 (Melsel)
Rita PEO-2 (Rita)

PEG-14M

CTFA Monograph ID: 1964

CAS No.: 25322-68-3 (Generic)

JPN Translation:
PEG - 14 MCN Translation:
聚乙二醇-14M

Definition: PEG-14M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 14000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, CIR, [SQ] JACT-12(5)-1993, INN, JSQI, MI-13(7651), NF XVII, TSCA, USAN

Chemical Classes: Alkoxylated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Reported Product Categories: Shampoos (Non-coloring); Shaving Preparations, Misc.; Shaving Cream (Aerocel, Brushless and Lather); Bath Oils, Tablets, and Salts; Bath Soaps and Detergents; Cleansing Products (Cold Creams, Cleansing Lotions, Liquids and Pads)

The inclusion of any compound in the Dictionary and Handbook does not indicate that use of that substance as a cosmetic ingredient complies with the laws and regulations governing such use in the United States or any other country.

PEG-14M (Cont.)

Technical/Other Names:

macrogol (INN)
PEG-14000
Polyethylene Glycol (14000)
Polyoxyethylene (14000)

Trade Names:

Polyox WSR-205 (Amerscol)
Polyox WSR N-3000 (Amerscol)

PEG-20M

CTFA Monograph ID: 1965

CAS No.: 25322-88-3 (Generic)

JPN Translation:

PEG - 20 M

CN Translation:

聚乙二醇-20M

Definition: PEG-20M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 20000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, CIR: [SQ] JACT-12(5)-1993, EP, INN, JSQI, MI-13(7651), NF XIX, TSCA, USAN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
Macrogolum 20000 (EP)
PEG-20000
Polyethylene Glycol 20000
Polyoxyethylene (20000)

Trade Name Mixture:

Vogeles SR (Laboratoires Seroblogiques)

PEG-23M

CTFA Monograph ID: 3709

CAS No.: 25322-68-3 (Generic)

JPN Translation:

PEG - 23 M

CN Translation:

聚乙二醇-23M

Definition: PEG-23M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 23000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651), NF XVIII, USAN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
PEG-23000
Polyethylene Glycol (23000)
Polyoxyethylene (23000)

Trade Names:

Polyox WSR N-12K (Amerscol)
Rita PEO-3 (Rita)

PEG-25M

CTFA Monograph ID: 6480

CAS No.: 25322-68-3 (Generic)

JPN Translation:

PEG - 25 M

CN Translation:

聚乙二醇-25M

Definition: PEG-25M is the polymer of ethylene oxide that conforms generally to the formula:



where n has a value of 25000.

Information Sources: INN, JSQI

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
PEG-25000
Polyethylene Glycol (25000)
Polyoxyethylene (25000)

PEG-45M

CTFA Monograph ID: 3710

CAS No.: 25322-68-3 (Generic)

JPN Translation:

PEG - 45 M

CN Translation:

聚乙二醇-45M

Definition: PEG-45M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 45000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651), NF XVIII, USAN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Reported Product Category: Shampoos (Non-coloring)

Technical/Other Names:

macrogol (INN)
PEG-45000
Polyethylene Glycol (45000)
Polyoxyethylene (45000)

Trade Name:

Polyox WSR N-60K (Amerscol)

PEG-65M

CTFA Monograph ID: 15211

CAS No.: 25322-68-3 (Generic)

Definition: PEG-65M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 65000.

Information Source: INN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
Polyethylene Glycol (65000)
Polyoxyethylene (65000)

Trade Name:

Aikox E-100 (Maisei)

PEG-90M

CTFA Monograph ID: 1966

CAS No.: 25322-68-3 (Generic)

JPN Translation:

PEG - 90 M

The inclusion of any compound in the Dictionary and Handbook does not indicate that use of that substance as a cosmetic ingredient complies with the laws and regulations governing such use in the United States or any other country.

PEG-20 Mannitan Laurate

CN Translation:
聚乙二醇-90M

Definition: PEG-90M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 90000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651), NF XVII, TSCA, USAN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
PEG-90000
Polyethylene Glycol (90000)
Polyoxyethylene (90000)

Trade Names:

Polyox WSR-301 (Amersol)
Rita PEO-18 (Rita)

PEG-115M

CTFA Monograph ID: 3711

CAS No.: 25322-68-3 (Generic)

JPN Translation:
PEG - 115 M

CN Translation:
聚乙二醇-115M

Definition: PEG-115M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 115000.

Information Sources: 21CFR172.770, 21CFR173.310, 21CFR175.300, 21CFR178.3910, INN, JSQI, MI-13(7651)

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
PEG-115000
Polyethylene Glycol (115000)
Polyoxyethylene (115000)

Trade Name:

Allox E-240 (Meisel)

PEG-160M

CTFA Monograph ID: 7730

CAS No.: 25322-68-3 (Generic)

JPN Translation:
PEG - 160 M

CN Translation:
聚乙二醇-160M

Definition: PEG-160M is a polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 160000.

Information Source: INN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
Polyethylene Glycol (160000)
Polyoxyethylene (160000)

Trade Name:

Rita PEO-27 (Rita)

PEG-180M

CTFA Monograph ID: 18747

CAS No.: 25322-68-3 (Generic)

Definition: PEG-180M is the polymer of ethylene oxide that conforms generally to the formula:



where n has an average value of 180,000.

Information Source: INN

Chemical Classes: Alkoxyated Alcohols; Polymeric Ethers

Functions: Binder; Emulsion Stabilizer; Viscosity Increasing Agent - Aqueous

Ingredient Source: Synthetic

Technical/Other Names:

macrogol (INN)
Polyethylene Glycol 118000

Trade Name:

Polyox WSR-308 (Amersol)

PEG-16 MACADAMIA GLYCERIDES

CTFA Monograph ID: 12413

JPN Translation:

PEG - 16 マカデミアグリセリズ

Definition: PEG-16 Macadamia Glycerides is the polyethylene glycol derivative of the mono- and diglycerides derived from macadamia nut oil with an average of 16 moles of ethylene oxide.

Chemical Classes: Alkoxyated Alcohols; Glycerol Esters and Derivatives

Functions: Skin-Conditioning Agent - Emollient; Surfactant - Emulsifying Agent

Ingredient Sources: Plant; Synthetic

Technical/Other Names:

Polyethylene Glycol (16) Macadamia Glycerides
Polyoxyethylene (16) Macadamia Glycerides

Trade Name:

Piorasolv PEG-16 Macadamia (Pioratech)

Trade Name Mixtures:

Elxtractives B (Essential Ingredients)
Elxtractives CS (Essential Ingredients)
Elxtractives DS (Essential Ingredients)
Elxtractives EG (Essential Ingredients)
Elxtractives HL (Essential Ingredients)
Elxtractives OS (Essential Ingredients)
VitaCon ABCM (Essential Ingredients)
VitaCon ACEM (Essential Ingredients)
VitaCon ADEM (Essential Ingredients)
VitaCon AEM (Essential Ingredients)
VitaCon AEM (Essential Ingredients)
VitaCon AEM (Essential Ingredients)

PEG-70 MANGO GLYCERIDES

CTFA Monograph ID: 6687

CN Translation:

PEG-70 芒果甘油酯类

Definition: PEG-70 Mango Glycerides is a polyethylene glycol derivative of the mono- and diglycerides from mango seed oil containing an average of 70 moles of ethylene oxide.

Chemical Classes: Alkoxyated Alcohols; Glycerol Esters and Derivatives

Functions: Skin-Conditioning Agent - Emollient; Surfactant - Cleansing Agent; Surfactant - Solubilizing Agent

Ingredient Sources: Plant; Synthetic

Technical/Other Names:

Polyethylene Glycol (70) Mango Glycerides
Polyoxyethylene (70) Mango Glycerides

Trade Name:

Upex 203 E-70 (Karlsbarns AB)

PEG-20 MANNITAN LAURATE

CTFA Monograph ID: 7402

The inclusion of any compound in the Dictionary and Handbook does not indicate that use of that substance as a cosmetic ingredient complies with the laws and regulations governing such use in the United States or any other country.

APPENDIX B

**phenedioxythiophene, tetramethacrylate end-
bon**

methacrylate end-capped
lunesulfonate dipast

0.01-0.5 S/cm (bulk conductivity)

**dispersion in propylene carbonate), contains p-
fonate as dopant**
6,000 (lit.)

1.189 g/mL, 25 °C
132 °C (270 °F) Moisture sensitive

glass btl 25 g 85.80

**(dispersion in nitromethane), contains p-
fonate as dopant**
pin coating applications
6,000

1.127 g/mL, 25 °C
132 °C (270 °F)

glass btl 25 g 85.80

ne-co-ethyl acrylate)

(CH₃CH₂)₂(CH₂CH(CO₂C₂H₅))₂
0.93 g/mL, 25 °C

yl acrylate: 18 wt. %, melt index 20
viscosity 0.78 dU/glit

116 °C
glass btl 500 g 49.10

yl acrylate: 18 wt. %, melt index 6
viscosity 0.81 dU/glit

152 °C
glass btl 500 g 55.20

ne-co-glycidyl methacrylate)



87 °C (Visc. ASTM D 1525-1kg)
99 °C density 0.94 g/mL, 25 °C

t index (190°C/2.16kg) 5 g/10 min
idyl functionality available for grafting or cross-

le coatings; and adhesion promoter
one A, ASTM D 2240) 92

thacrylate 8 wt. %
38 S 26-36 TSCA

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

glass btl 250 g 23.90
glass btl 1 kg 49.50

Poly(ethylene glycol)

Form	Mol. Wt.	M.P. (°C)	Viscosity at 210 °F (cSt)	Prod. No.	Price
liquid	average mol wt 200	-65	4.3	P3015-5G P3015-250G P3015-500G P3015-1KG P3015-20KG	9.00 12.90 21.50 33.20 531.00
viscous liquid	average M _n 285-315	-15-8	5.8	202371-5G 202371-250G 202371-500G 202371-1KG 202371-20KG	19.10 21.50 23.80 36.50 433.50
viscous liquid	average M _n 380-420	-4-8	7.3	202398-5G 202398-250G 202398-500G 202398-20KG	19.10 23.40 43.30 432.50
waxy solid (most)	average M _n 570-630	20-25	10.5	202401-5G 202401-250G 202401-500G 202401-20KG	19.10 26.00 26.30 433.50
waxy solid	average M _n 850-950	32-36	16	372994	Inquire
waxy solid	average M _n 950-1,050	39	17.4	P3515-5G P3515-250G P3515-500G P3515-1KG	13.10 18.00 21.60 32.40
waxy solid	average M _n 1,305-1,595	43-46	28	202436-5G 202436-250G 202436-500G 202436-20KG	15.50 22.80 30.60 382.00
chips	average M _n 1,900-2,200	52-54	-	295906-5G 295906-250G 295906-500G	20.10 24.20 31.10
powder	average M _n 3,015-3,685	54-58	90	202444-5G 202444-250G 202444-500G	21.60 29.00 33.60
flakes	average M _n 4,400-4,800	57-61	180	373001-10G 373001-250G 373001-1KG	21.30 24.80 55.00
powder (crystalline)	average M _n 7,000-9,000	60-63	800	202452-5G 202452-250G 202452-500G	18.10 27.40 32.00
flakes	average M _n 8,500-11,500	63-65	-	309028-5G 309028-250G 309028-500G	18.70 22.10 26.10
waxy solid	average M _n 14,000	62-67	-	637726-100G 637726-1KG	24.50 136.00

Poly(ethylene glycol) acrylate

[9051-31-4] H₂C=CHCO₂CH₂(CH₂)_nOH
density 1.12 g/mL, 25 °C n_D²⁰ 1.466

average M_n -375
viscosity 42 cSt (25 °C) lit.

contains 1,000-1,500 ppm MEHQ as inhibitor
R 36/37/38 S 26-36 Fp 113 °C (235 °F)

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

469823-100ML glass btl 100 mL 31.30
469823-500ML glass btl 500 mL 103.50

R 202122-34-43 S 26-27-36/37/39-45 Fp 113 °C (235 °F)
468258-100ML glass btl 100 mL 29.50
468258-250ML glass btl 250 mL 60.20

Poly(ethylene glycol) bis(3-aminopropyl) terminated

O,O'-Bis(3-aminopropyl)poly(ethylene glycol) 1,500
[34901-14-9] (C₂H₄O)_nC₄H₉N₂O

mp 49 °C
S 22-34/25 TSCA

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

452572-1G glass btl 1 g 26.60
452572-5G glass btl 5 g 87.50

APPENDIX C

Additional Data:

Preparation of Test Compositions:

Composition B was prepared as described in Example 1 described in Table I of the application (see page 7 of the application). Composition B comprises polyethylene glycol (PEG) having a degree of polymerization of 45,000. Compositions A, B and D, were prepared as described above for Composition B, except that Composition A comprises polyethylene glycol (PEG) having a degree of polymerization of 7,000; Composition C comprises PEG having a degree of polymerization of 2,000 and Composition D comprises a PEG having a degree of polymerization of 400.

Evaluation of Application Performance and Effectiveness of the Tested Compositions:

Seven 5 cm² flamed areas were defined on the forearms of ten male subjects between the ages of twenty and forty. Compositions A-D were applied to the flamed areas with a flat brush. Application performance of the various compositions was evaluated and classified into one of two groups ("the composition was capable of being applied in a uniform manner" or "the composition, when applied, was liable to be uneven").

After ten minutes the test compositions were washed away with water. After twenty-four hours, the forearms of the subjects were visually examined and the effectiveness of each composition was determined by examining the stratum corneum (i.e., the top layer of skin) for uniform peeling. The effectiveness of each composition was classified into one of three group ("after application of the composition, the stratum corneum was uniformly peeled," "after application of the composition, the stratum corneum was peel patchwise" and "after application of the composition, the stratum corneum was not peeled"). Results indicated that the compositions comprising PEG having a degree of polymerization between 2,000 and 50,000 (i.e., Compositions A-C) were more effective than the compositions comprising PEG having a degree of polymerization below 2,000 (i.e., Composition D). See Table A below.

Evaluation of the Stability of the Tested Compositions:

The viscosity of Composition B on the next day was assumed to be 100. The viscosities of the other compositions on the next day are shown in Table A in a relative value.

Table A. Results.

	Degree of Polymerization	Viscosity on the next day	Application Performance		Effectiveness		
			Capable of being applied in a uniform manner	Liable to be uneven	Stratum corneum was uniformly peeled	Stratum corneum was peeled patchwise	Stratum corneum was not peeled
Composition A	7,000	80	9	1	7	3	0
Composition B	45,000	100	9	1	8	2	0
Composition C	2,000	72	9	1	8	2	0
Composition D	400	Unable to evaluate (water-like)	2	8	2	8	0